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# Impact of Network Computing

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**EE96**

***Impact of Network Computing***

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## ***Impact of Network Computing***

**Peter Cunningham  
President, INPUT**

**pac@input.com  
<http://www.input.com>**

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## *Agenda*

- Internet Applications
- Network Computers
- Enterprise Computing

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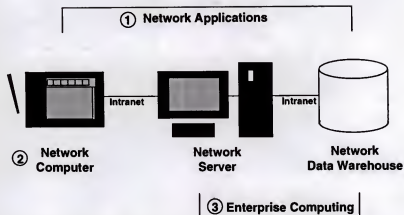
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# Network Computing



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## ***Network Computing Business Opportunities***

- Network computing revolution will create:
  - \$60 billion software industry by 2000
  - \$45 billion hardware industry by 2000
  - \$106 billion IT services industry by 2000

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**Migration of Applications to  
New Intranet Platforms**

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## ***Internet's Impact on Applications***

- “Opens” collaboration
- Migrates business operations applications to the network
- Interactive applications emerge
- Enables electronic business

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## **Client/Server Application Development**

- **50% believe time & cost prohibitive**
- **75% believe Internet applications solve the problem**
  - lower cost of deployment & maintenance

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## **Advantages of Internet Applications**

- Lower deployment & maintenance costs
- Balance load across thousands of servers
- Serve millions of client devices
- Mix database types
- Easily modify system and software

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## ***Internet Application Platform War***

- “Open” Group
  - Netscape, Oracle, Sun, Novell
- Wintel Group
  - Microsoft’s ActiveX & Network OLE
- “Wait & See” Group
  - Hewlett Packard, Digital
- IBM

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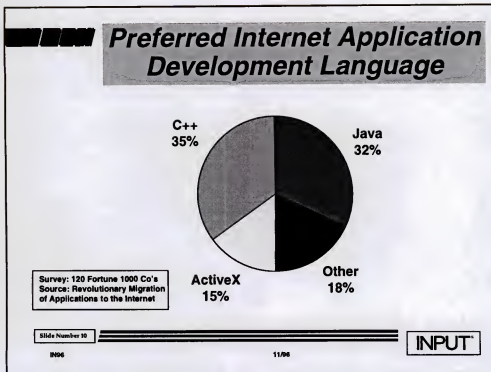
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## ***Vendors Connecting Applications to the Web***

- OneWave Inc. connecting to SAP, Baan
- NetDynamics connecting to PeopleSoft
- Lotus connecting Notes to Web with Domino

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## ***Examples of Migrated Applications***

- **Corel's Office Apps (WordPerfect)**
- **Dun & Bradstreet's SmartStream Web Series**
- **Applix, Inc.'s Espresso!**
- **Netscape's Collabra**

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## ***The Internet Will Have Greatest Impact On:***

- **Cross-industry Applications**
  - Human Resources
  - Office Automation
  - Engineering & Scientific Collaboration
- **Vertical Industry Applications**
  - Business services
  - Retail & wholesale

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## **CSX Corp. Case Study**

- **Largest freight transporter in U.S.**
- **Transportation Workstation (TWS)**
- **Inter-Enterprise Application**
  - Migrated from C++ to Java
  - Three phases
- **Resulted in time and cost savings**

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## ***Internet Drives Interactive Applications***

- Applications that interact with customers
- Electronic helpdesk
- Call centers
- Sales and marketing applications

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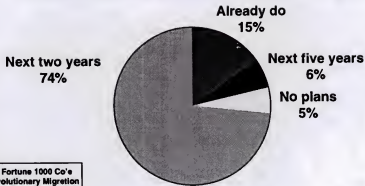
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## Extending Applications to Customers on Internet



Survey: 120 Fortune 1000 Co's  
Source: Revolutionary Migration  
of Applications to the Internet

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## ***Internet Drives Super Vertical Applications Opportunities***

- **Business processes will be reengineered across industries**
- **Super-vertical applications will enable the automation of these processes**
- **Sales model for application software products will change**

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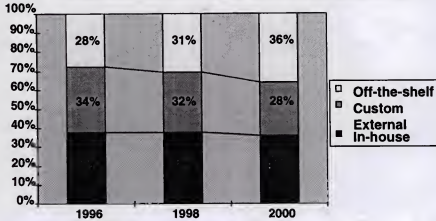
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## Who Will Develop Internet Applications



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## **Conclusions**

- Applications will migrate to the Internet to decrease deployment & maintenance costs
- Internet platform will be a mixture of competing technologies

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## **Recommendations**

- Reengineer business processes beyond the boundaries of the corporation
- Enable the automation of these processes with Internet technology
- Develop collaborative applications internally
- Develop interactive applications externally

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## ***Internet Appliances - Challenge & Opportunity***

**Peter Cunningham**  
**President, INPUT**  
pac@input.com  
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## ***How PC Users Spend Their Time***

- **15% of PCs used for single-task functions (data entry, POS, etc.)**
- **User's time on PC:**
  - **1/3 on Internet software (Web, email)**
  - **1/2 on “office” applications**

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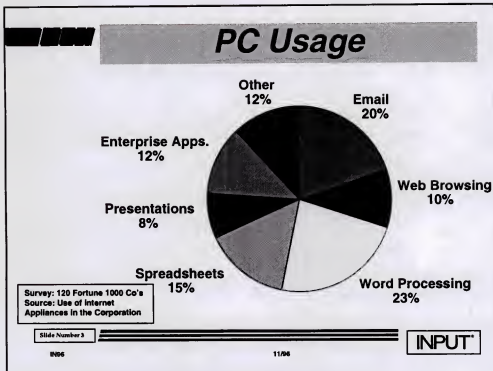
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## Will Internet Appliances Take Sales from PCs?



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## ***Internet Appliances***

● **Benefits**

● **Challenge** ➡ **Applications**

● **Opportunities** ➡ **Solutions  
Services**

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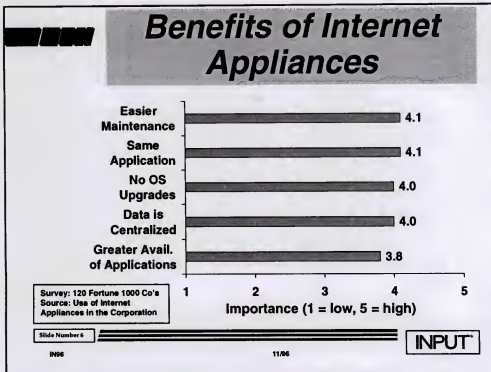
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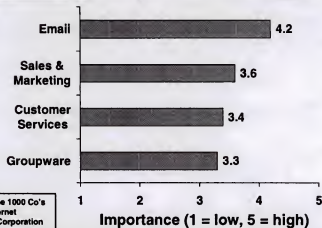
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## Internet Appliance Application Usage



Survey: 120 Fortune 1000 Co's  
Source: Use of Internet  
Appliances in the Corporation

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## **Network Computer Applications**

- **CSX using Sun's JavaStations internally and at customer sites**
- **FTD uses network computers at 20,000 affiliated flower shops around the world**

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## ***Network Computer Applications (continued)***

- **Marimba offers NC software for users to subscribe to channels**
- **Active Software offers workgroup software programs for NCs**

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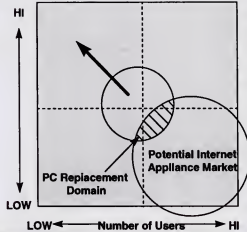
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# Potential Internet Appliance Market



Information Analyzer
Information Producer
Information Mover
Information Consumer

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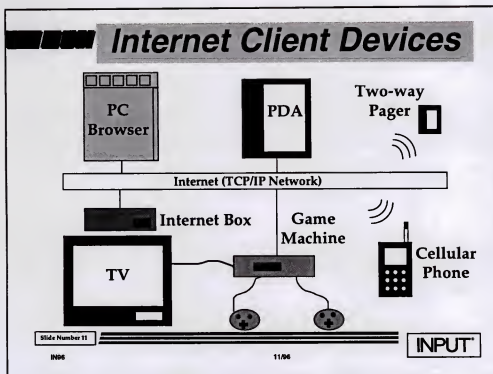


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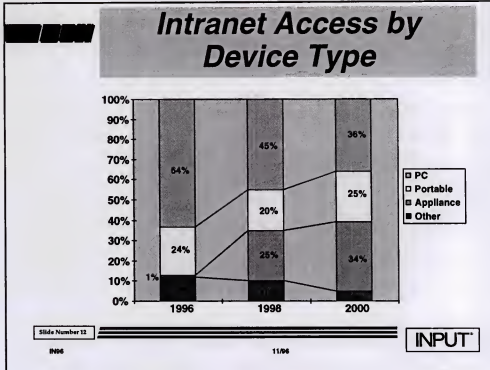
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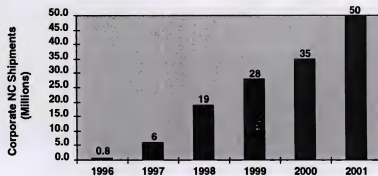
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## Network Computer Shipments, Worldwide



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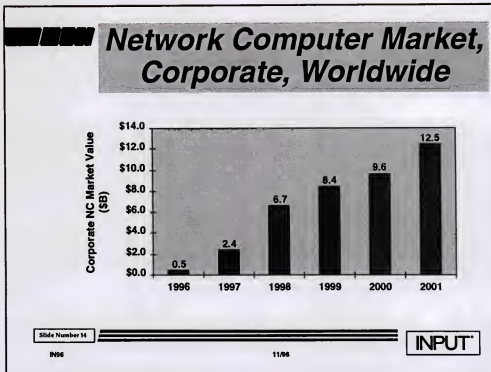
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## **Conclusions**

- Network computers **WILL** replace PCs in the corporation
- NC sales in the corporation will equal PC sales by the end of 2000

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## **Recommendations**

- Question the acquisition of new PC clients
- Purchase new network computers for greater access and manageability
- Replace PCs with NCs to lower maintenance costs and centralize administration

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## ***Intranet Impact on Enterprise Computing***

**Peter Cunningham**  
**President, INPUT**  
pac@input.com  
<http://www.input.com>

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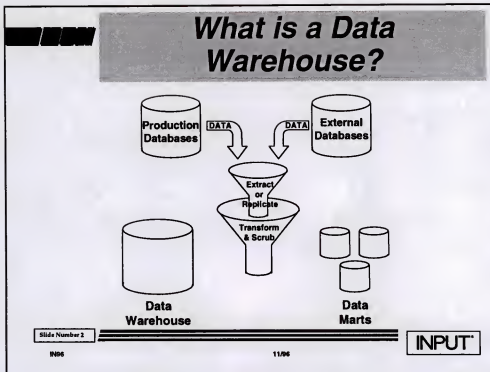
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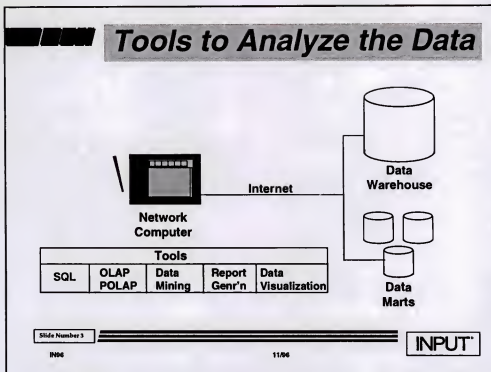
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## ***Impact of Intranets on Data Mining***

- **Easier & faster access and analysis**
- **Inter-enterprise reengineering**
- **New operational applications**

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## **Consumerizing the Data Warehouse**

● simple and cost-effective way to expand the reach of the data warehouse to:

- employees
- strategic business partners
- outside vendors
- corporate customers
- individuals

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## **Internet Complements Data Warehouse**

- Removes the complexity of traditional client-side software
- Decreases capital intensity and project expense

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## ***Case Study: Catalog Sales***

- **Business Problems**
  - Customer retention
  - Cross-selling
  - High direct mail cost

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## ***Case Study: Catalog Sales***

- **Technical problems**
  - **Fragmented data from many OLTP systems**
  - **No way to view “whole customer”**
  - **No demographic data**
  - **Impossible to analyze data**
  - **Current solutions too costly to employ**

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## **Case Study: Catalog Sales**

### ● **Solutions**

- Data warehouse connected to the Web
- Daily update
- Ad hoc access
- Multiple analysis tools

### ● **Result**

- Increase in sales
- Decrease in mail costs

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## ***OLAP Vendors Providing Data Warehouses from Browsers***

- **Arbor Software's Essbase Web Gateway**
- **MicroStrategy's DSSWeb**
- **Information Advantage's WebOLAP**

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## ***Internet Drives Requirement for Scalable Data Warehouses***

- **Corporations are rapidly turning to scalable/parallel hardware and database platforms**
- **Need to marry large-scale data warehouses to MPP systems**

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## ***Electronic Commerce Will Create Data to Mine***

- Mining transaction data results in better control of inventory
- Transactions on the Internet will drive the demand for data analysis tools market

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## ***Return of the Super Service Bureau***

- **Centralized control**
- **Low cost of maintenance & administration**
- **High level of security & integrity**
- **Expandable computing power & data storage**
- **Greater reliability**

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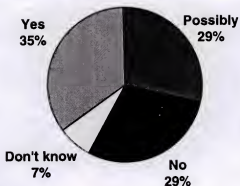
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## Will Future Applications Be "Leased" on the Internet?



Survey: 120 Fortune 100 Co's  
Source: Revolutionary Migration  
of Applications to the Internet

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## **Conclusions**

- Internet is accelerating the demand for data warehousing and mining solutions
- Data mining will guide decision-making for electronic business
- Purchasing bureau services on the Internet will result in cost savings

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## **Recommendations**

- **Centralize data in a warehouse**
- **Connect the data warehouse to your Intranet**
- **Deploy data mining software to network computers and PCs**
- **Implement electronic business systems together with data warehouses**

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